(1) introducing a vector comprising a transcriptional regulatory sequence into a cell;

(2) maintaining said cell under conditions appropriate for integrating said vector into the genome of said cell by non-homologous recombination whereby said transcriptional regulatory sequence is operably linked to said endogenous cellular gene;

(3) maintaining said cell under conditions appropriate for expressing said endogenous cellular gene in said cell by means of said transcriptional regulatory sequence;

(4) maintaining said cell so as to produce amounts of said protein from said endogenous cellular gene; and

(5) purifying said protein.

79. (Previously Presented) A method for producing a protein from an endogenous cellular gene comprising:

(1) introducing a vector comprising a non-retrovirus transcriptional regulatory sequence into said cell;

(2) maintaining said cell under conditions appropriate for integrating said vector into the genome of said cell by non-homologous recombination whereby said transcriptional regulatory sequence is operably linked to said endogenous cellular gene;

(3) maintaining said cell under conditions appropriate for expressing said endogenous cellular gene in said cell by means of said transcriptional regulatory sequence; and

(4) maintaining said cell so as to produce amounts of said protein from said endogenous cellular gene.

80. (Previously Presented) A method for producing an expression product of an endogenous cellular gene comprising:

(1) introducing a vector comprising a transcriptional regulatory sequence operably linked to a secretion signal sequence into a cell;

(2) maintaining said cell under conditions appropriate for integrating said vector into the genome of said cell by non-homologous recombination whereby said transcriptional regulatory sequence and secretion signal sequence are operably linked to said endogenous cellular gene;

(3) maintaining said cell under conditions appropriate for expressing said endogenous cellular gene in said cell by means of said transcriptional regulatory sequence; and

(4) maintaining said cell so as to produce amounts of the expression product of said endogenous cellular gene.

81. (Previously Presented) The method of claim 60 wherein said vector further comprises an unpaired splice donor sequence operably linked to said transcriptional regulatory sequence.

82. (Previously Presented) The method of claim 60 wherein said transcriptional regulatory sequence is non-retroviral.

83. (Currently Amended) A method for producing a protein from an endogenous cellular gene comprising:

(1) introducing a genetically engineered vector ~~construct~~ comprising a transcriptional regulatory sequence operably linked to an unpaired splice donor sequence into a cell;

(2) maintaining said cell under conditions appropriate for integrating said vector ~~construct~~ into the genome of said cell by non-homologous recombination whereby said transcriptional regulatory sequence and unpaired splice donor sequence are operably linked to said endogenous cellular gene;

(3) maintaining said cell under conditions appropriate for expressing said endogenous cellular gene in said cell by means of said transcriptional regulatory sequence; and

(4) maintaining said cell so as to produce amounts of the protein encoded by said endogenous cellular gene.

84. (Previously Presented) The method of claim 83 wherein said transcriptional regulatory sequence is non-retroviral.

85. (Currently Amended) A method to express and screen for expression of a cellular gene comprising:

(1) introducing a genetically engineered vector ~~construct~~ into a cell and maintaining said cell under conditions appropriate for integrating said vector ~~construct~~ into the genome of a cell, said vector ~~construct~~ lacking targeting sequences and containing a transcriptional regulatory sequence and unpaired splice donor sequence, so that the coding region of a gene in the genome is operably linked to the transcriptional regulatory sequence and splice donor sequence on the vector ~~construct~~; and

(2) screening said cell for expression of a protein that is encoded by said gene.

86.(Previously Presented) The method of claim 85 wherein said transcriptional regulatory sequence is non-retro viral.

87. (Previously Presented) The method of claim 85 with the additional step of isolating the cell producing the protein encoded by said gene.

88. (Currently Amended) A method to express and screen for expression of a cellular gene comprising:

(1) introducing a genetically engineered vector ~~construct~~ into a cell and maintaining said cell under conditions appropriate for integrating said vector ~~construct~~ into the genome of a cell by non-homologous recombination, said vector ~~construct~~ containing a transcriptional regulatory sequence and unpaired splice donor sequence, so that the coding region of a gene in the genome is operably linked to the transcriptional regulatory sequence and splice donor sequence on the vector ~~construct~~; and

(2) screening said cell for expression of a protein encoded by the cellular gene, said gene and said upstream region of said gene lacking homology to the vector ~~construct~~ that would facilitate homologous recombination of the vector ~~construct~~ with the genome to cause expression of said gene.

89. (Previously Presented) A method to express and screen for expression of a desired phenotype in a cell comprising the steps of:

(1) constructing a vector comprising a transcriptional regulatory sequence and an unpaired splice donor sequence;

(2) delivering copies of the vector to a plurality of cells;

(3) maintaining the cells under conditions permitting non-homologous recombination between the vector and the genome of the cells, thereby expressing an endogenous gene conferring said desired phenotype; and

(4) screening the non-homologously recombinant cells by assay for the desired phenotype to identify cells in which expression of the desired phenotype occurs.

90. (Previously Presented)A method as claimed in claim 89 wherein the desired phenotype is production of a particular protein and the assay is conducted by testing for increased production of the protein.

91. (Previously Presented) A method to express and screen for expression of a desired gene in a cell comprising the steps of:

(1) constructing a vector comprising a transcriptional regulatory sequence and an unpaired splice donor sequence;

(2) introducing said vector into at least 100,000 cells;

(3) maintaining said cells under conditions appropriate for integrating the vector by non-homologous recombination into said cells;

(4) screening the non-homologously recombinant cells produced in (3) by assay for a phenotype to identify cells in which the expression of the desired gene has been expressed.

92. (Currently Amended) A purified cell expressing a protein, said cell comprising in its genome a genetically engineered vector ~~an inserted genetic construct~~, the genetic vector ~~construct~~ comprising a transcriptional regulatory sequence operably linked to a splice donor sequence, said transcriptional regulatory sequence being linked effectively in the cell's genome to a gene in the genome encoding said protein so as to cause expression of said gene and said splice donor sequence being spliced to a splice acceptor sequence in said gene, the ~~construct~~ vector being inserted into said gene or upstream region of said gene, said gene and upstream region having no homology to any sequences in the ~~genetic construct~~ vector that would facilitate homologous recombination of the ~~construct~~ vector with the genome to cause expression of said gene.

93. (Currently Amended) The cell of claim 92 wherein the ~~inserted genetic construct~~ vector additionally contains an amplifiable marker.

94. (Currently Amended) A purified cell expressing a protein, said cell comprising in its genome a ~~an inserted genetic construct~~ genetically engineered vector, the ~~genetic construct~~ vector comprising a transcriptional regulatory sequence operably linked to a splice donor sequence, said transcriptional regulatory sequence on the ~~construct~~ vector being linked effectively in the cell's genome to a gene in the genome encoding said protein so as to cause expression of said gene and said splice donor sequence being spliced to a splice acceptor sequence in said gene, the ~~construct~~ vector containing no homology to any sequences in said gene or to upstream regions of said gene that would facilitate homologous recombination of the ~~construct~~ vector with the genome to cause expression of said gene.

95. (Previously Presented) A method to express and screen for expression of a gene encoding a protein comprising:

(1) constructing a vector comprising a transcriptional regulatory sequence and an unpaired splice donor sequence;

(2) introducing said vector into a cell;

(3) maintaining the cell under conditions permitting non-homologous recombination events between the inserted vector and the genome of the cell whereby said transcriptional regulatory sequence and splice donor sequence are operably linked to said gene; and

(4) screening the recombinant cell by assay for expression of the protein encoded by said gene, said gene and upstream region of said gene having no homology to the vector that would facilitate homologous recombination of the vector with the genome to cause expression.

96. (Currently Amended) A purified cell expressing a protein encoded by an endogenous gene, said cell comprising in its genome a ~~an inserted genetic construct~~ genetically engineered vector, the ~~genetic construct~~ vector comprising a transcriptional regulatory sequence operably linked to a splice donor sequence, said transcriptional regulatory sequence on the construct being linked effectively in the cell's genome to cause expression of a protein encoded by said gene and said splice donor sequence being spliced to a splice acceptor sequence in said gene, the ~~genetic construct~~ vector being inserted into said gene or upstream region of said gene by non-homologous recombination.

97. (Currently Amended) A purified cell expressing a protein encoded by an endogenous gene, said cell comprising in its genome a ~~an inserted genetic construct~~ genetically engineered vector, the ~~genetic construct~~ vector comprising a transcriptional regulatory sequence operably linked to a splice donor sequence, said transcriptional regulatory sequence on the ~~genetic construct~~ vector being linked effectively in the cell's genome to cause expression of a protein encoded by said gene and said splice donor sequence being spliced to a splice acceptor sequence in said gene, said ~~genetic construct~~ vector not containing a targeting sequence that would facilitate homologous recombination of the ~~construct~~ vector with the genome to activate expression of said gene.

REMARKS

Applicants would like to thank the Examiner for the telephone conference of July 16, 200, in which the Examiner indicated that the amendments presented herein would be entered prior to transferring this case to a new Group Art Unit.

Claims 78-97 were pending in the instant application. Claims 83, 85, 88, 92, 93, 94, 96 and 97 have been amended by the amendments presented herein. Accordingly, upon entry of the amendments presented herein claims 78-97 will be pending in the instant application. No new matter is being presented. The amendments made to the